Land socialization was one of the first legal acts instituted by the Bolshevik government in 1917, and it was a measure that initiated a feverish period of theorization and construction of new spatial models. If capitalist urbanism was dense, centralized, and exploitative, Soviet physical and economic planners asked, how might socialist space be organized differently to engender fair economic and social relations? While actualized socialist cities of the early Soviet period—known in their time as social-industrial settlements—have been criticized by architectural historians for their failure to instantiate revolutionary forms, my research establishes the import of these sites as vital nodes in a network of living laboratories for urban experimentation. I argue that early Soviet planners were motivated not by form but by process—and specifically praxis, that is, the critical engagement with existing conditions in order to affect systemic change. The settlements designed by these practitioners must be investigated as mutable research sites that actively and iteratively produced knowledge about possible trajectories for socialist urbanism. From these experiments emerged a codified set of practices that drove planning work in the USSR and far-flung sites under the Soviet sphere of influence through the twentieth century.

To reveal the development of early Soviet planning praxis broadly and comparatively, my research spans from land socialization to the conclusion of Stalin's First Five-Year Plan for national industrialization (1917–1932). The socialist settlements I investigate in depth are located in three Soviet republics: Baku, Azerbaijan; Magnitogorsk, Russia; and Kharkiv, Ukraine. For the purposes here, I will follow the design and construction of a tractor factory settlement in Kharkiv from 1929 to 1931, to demonstrate that deep analysis of a material artifact—the method of the architectural historian—can uncover salient political, economic, and cultural themes. Specifically, this factory settlement reveals how the American model of industrial standardization enabled and empowered the Soviets to enact distinctly socialist urban patterns.

Physical planning took on a critical role in the USSR during the fulfillment of the First Five-Year Plan, 1928–1932. To achieve “Socialism in One Country,” foodstuffs and technology had to be generated within Soviet borders, an effort that required intelligent utilization of the
vast territories, natural resources, and population of the USSR. Avant-garde spatial theory and hard-nosed economic strategy converged on a polynuclear settlement pattern that would simultaneously reduce crowding in pre-revolutionary cities, diffuse economic development among many sites, and control the immense territories now under Soviet power.

The ambitious timetable set by the state’s economic planners for the Plan did not allow for a period of internal architectural research and development. Pragmatism, forced by the schedule, led the Supreme Soviet of the National Economy (VSNKh) to Detroit architect Albert Kahn, the designer for Henry Ford. In May 1929, the Soviet government signed a contract with Kahn’s firm to design and oversee construction for a single tractor factory in Stalingrad, one that would produce 40,000 tractors annually. The reference map of the Plan sent to Kahn’s office featured a descriptive key filled with industrial “types”—electric stations, steel combines, tractor factories—that were scattered across the Eurasian continent in an immense multinodal constellation. Many of the locations earmarked for heavy industry were undeveloped sites of mineral wealth far removed from existing transportation infrastructure. “Pop up” industrial complexes, the purview of American expertise, jibed with the Soviet aspirations to rapidly develop far-flung production sites. [Figure 1]

Progress toward the First Five-Year Plan’s formidable capital construction goals was, nonetheless, repeatedly thwarted by a lack of both timely drawing sets and building materials as well as skilled foremen to oversee and workers to build the complexes. On December 26, 1929, two concurrent decisions pushed the Soviet construction industry toward a model of national standardization. The Council of People’s Commissars (SNK) issued a decree “On measures to cure the ills of building affairs,” which commanded immediate rationalization of professional practices.2 The same day, the SNK signed a draft for an expanded contract with Albert Kahn, Inc. to direct the design and supervise construction for all industrial projects in the USSR for a period of two years. [Figure 2] In his previous contract with the Soviet government for the design of the Stalingrad factory, Kahn retained rights to the architect’s instruments of service—drawings, specifications, and the intellectual property contained in the design—as is common practice in the United States. Under the new agreement, Kahn’s firm would provide the client, the VSNKh, “standard factory layouts, detailed drawings, specifications, and other technical documentation typical for architects working in America,” all of which would become the lawful property of the VSNKh at the end of the term.3

The importance of this proviso, and the timing of the agreement, cannot be understated. When Kahn signed the expanded agreement, just two months had passed since Black Tuesday, which called into question the future of Kahn’s work in the United States. The Stalingrad Tractor Factory was also nearing completion.4 Although the Stalingrad factory was designed under the restrictive American-style contract, once the client-favoring agreement was put in place Kahn’s blueprints seem to have fallen under the new legal regime. Just nineteen days after the contract was inked, construction began on a new tractor factory outside Kharkiv, the capital of the Ukrainian Socialist Republic.

The Kharkiv Tractor Factory, constructed upon designs formulated by Kahn’s Detroit office for the Stalingrad one, provides a view into early stages of architectural standardization in the USSR. Kharkiv was not a carbon copy of Stalingrad in terms of either material or labor, and these differences signal the reformulation of American industrial practices to meet the capacities of a still-developing socialist context. At play here is the concept of circulation des savoirs, which insists that expertise—in this case architectural—is expanded and transformed through the looping interaction of specialists in varied political, economic, and cultural contexts.1 American techniques were utilized for ends not anticipated by their creators, demonstrating, perhaps, the flexibility and receptivity of the techniques to serve various masters.

As the construction at Kharkiv unfolded, significant material changes were made between the original factory at Stalingrad and its nascent twin. Leon Swajian, the construction foreman from Kahn’s office for both tractor factory sites noted: “Kharkov [sic] was supposed to follow the designs made for Stalingrad, but this proved...

Continued on page 19
impossible. Imports of the steel had to be economized, so the Kharkov plant was built largely of reinforced concrete. A Soviet history fills in the details. The economics and timeline of the Kharkiv factory did not permit imports of all fabricated steel products from the United States, as had been the case in Stalingrad, nor was importation sustainable over the long term. And the nascent Soviet steel industry was incapable of providing identical sections to those designed for Stalingrad, or even the required amount of reinforcing bars for a fully concrete version. As a consequence, the Kharkiv Tractor Factory was effectively redesigned as a hybrid complex with three structural systems: steel, steel on top of concrete foundations, and reinforced concrete.7

The long-term implications of the tractor factory standardization experiment become clearer at the Union scale. Kharkiv was a model project for the *priviazka* system of typological replication that continued well after Kahn’s staff left the USSR in 1932. *Priviazka*, directly translated, is a tightening, or binding; in the Soviet architectural context it came to mean modification of a standardized design to meet specific site conditions. This Soviet version of standardized architectural production assumed that strategic adjustments of the original model would be necessary, changes that would permit the final product and its model to bear a family resemblance even if the material and labor conditions under which they were created differed drastically. As technology historian Yves Cohen writes in his study comparing the American and Soviet versions of Ford tractors, “Compared side by side, a *Fordson* and *Fordzon—Putilovets* resembled each other like brothers... I do not at all mean to say that standardized products have to be identical. On the contrary: it is this very paradox of mass production that Henry Ford was the first to solve; to be identical at the level of the complete product, its constituent parts need to not be identical.” Cohen notes that what is important to control in this imperfect replication process is tolerance, the reasonable dimensional distance between the original and its copy, such that the two act satisfactorily alike. [Figure 3]

Can Cohen’s notion of tolerance be applied to Stalingrad and Kharkiv? The complexes differ greatly in material composition, methods of construction, and finally, even outward appearance. But a close comparison of each factory’s architectural DNA—the plan—reveals the projects to be typologically related. How does one assess tolerance in such a case, and at what point is tolerance exceeded to make the second iteration so different that it can no longer be considered a replica? Perhaps we can pose the question to our protagonist. Would Albert Kahn, well versed in Ford’s philosophy of mass production, have considered Kharkiv his own project, despite the copious design changes? In fact, he did. In a 1939 American monograph entitled *Industrial Architecture of Albert Kahn, Inc.*, a double-page spread illustrates a map of the world peppered with cities in which Kahn architecture resides. Kahn projects are found on all six habitable continents, with the US and the USSR sharing the highest density of building. Stalingrad and Kharkiv are both indicated as Kahn sites. In total, Kahn office records confirm that 531 factories based upon their drawings and

*Figure 3 (clockwise from top left):* *Fordson Tractor, Ford Factory, Dearborn, MI.* Image credit: Henry Ford Foundation

*Kharkov Tractor Factory (KhTZ).* Image credit: Golouko, G. V. *Narysy Istorii Arkhitektury Ukrainskoї Rsr, 1962

*Fordzon—Putilovets Tractor, Putilov Factory, Leningrad USSR.* Image credit: www.novate.ru
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Specifications were completed in the USSR by the time their two-year consultancy was over, and more than 4,000 Soviet technicians were trained by Kahn management in Detroit, Moscow, and in the satellite construction offices. The number of unconfirmed facilities based on plans or details developed by Kahn’s office, priviazka copies of brotherly resemblance, will probably never be known, but is likely to be in the thousands.

Soviet economic planners’ desire to quickly replicate industrial concerns and residential quarters across vast territories met success through the interscalar standardization of architectural details, standard building types, and prespecified settlement modules. Finally, the diffuse socialist settlement diagram justified by citations of Marx and Engels and promoted by socialist urban theoreticians was instantiated by an immense and attenuated act of American-styled, but Soviet-modified, architectural replication across the Eurasian continent.

Notes

1. Although the name of the city is Kharkov in Russian (a spelling that was used sporadically in archival documents), and Kharkiv as transliterated with the Library of Congress standard, I have used here the current, Ukrainian spelling of Kharkiv throughout.

2. The decree was summarized in Pravda, December 29, 1929, in an article entitled “The Reorganization and Improvement of Construction.” A list of all of the issues addressed in the decree included the need for mechanization of construction work, standardization, industrialization of building materials, skilled work cadres, professional exchanges with other industrialized nations, use of foreign technical expertise, the organization of manufacturing in construction work, establishment of construction firms and branches, management and planning of the construction industry, and decreasing the cost of construction. This directive is also discussed in Catherine Ann Chichester Cooke, The Town of Socialism (Cambridge: University of Cambridge, 1974): 166–67.


5. An excellent discussion of both circulation des saviors and histoire croisée can be found in Yves Cohen, “Circulatory Localities: The Example of Stalinism in the 1930s,” Kritika: Explorations in Russian and Eurasian History 11, no. 1, Winter (2010).


7. All remaining walls, and wall infill, were constructed of red brick produced at the new brick factory three kilometers from the tractor factory. I. N. Baltuzevich, Oppt i Uroki Stroitel’stva Khz (Moskva-Leningrad: Gosstroiizdat, 1932): 10–11.


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